

Metal Industry Indicators

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

November 2000

The primary metals leading index dropped sharply in October after rebounding in September from four straight monthly declines. The other metal industry leading indexes also moved up in September, the latest month for which they are available, marking the first time since last January when all five leading indexes increased in the same month. Despite these increases, the trends of the leading indexes continue to point to a decline in near-term growth for the overall U.S. primary metals industry. The metals price leading index was flat in September, but its recent declining trend continues to suggest weak or falling growth for most metal prices over the next few months.

The **primary metals leading index** plunged 3.2% in October, falling to 121.1 from a revised 125.1 in September. This is the largest decline in the preliminary leading index in over 4 years. The index's 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, fell to -9.3% from a revised -4.2% in September. In the past three decades, leading index growth rates have been that low only around economic downturns. Normally, a growth rate below -1.0% signals a downward near-term trend for future growth in metals activity, while a growth rate above +1.0% signals an upward trend.

The October leading index is preliminary because only four of the index's eight components were available in time for its calculation. All four components moved down in October, with unusually large decreases in two components, the S&P stock price index for diversified machinery companies and the JOC-ECRI metals price index growth rate, accounting for two-thirds of the October decrease. Although the magnitude of the October drop in the primary metals leading index may be reduced after the other components are added, the trend of the leading index is pointing to a continuation of the decline in domestic primary metals activity that began last May.

The **steel leading index** posted its first increase in 8 months, moving up 0.5% in September to 107.1 from a revised 106.6 in August. The index's 6-month smoothed growth rate also increased, moving up to -5.9% from a revised -7.5% in August. Only one of the index's nine components, the S&P stock price index for steel companies, moved down in September. The largest positive contribution to the net increase in the index came from inflation-adjusted shipments of household appliances. The 1-month increase in the steel leading index is not enough to improve the forecast for future steel industry activity. The growth rate of the steel leading index, which continues to be well below -1.0%, still points to declining growth in U.S. steel industry activity in the near future.

Registering its second consecutive gain, the **aluminum mill products leading index** rose 1.4% in September, advancing to 159.1 from 156.9 in August. Meanwhile, the index's 6-month smoothed growth rate climbed above zero, rising to 2.1% from -0.5% in August. A large increase in construction contracts for commercial and industrial buildings accounted for nearly two-thirds of the net increase in the leading index. Except for a 0.5-hour decrease in the length of the average workweek in aluminum sheet, plate, and foil establishments, the other index components all registered moderate increases. The increases in the leading index over the past 2 months suggest that the U.S. aluminum mill products industry may experience flat-to-modest growth in activity in the months ahead.

The **primary aluminum leading index** rose 0.2% in September to 87.7 from a revised 87.5 in August, marking its first increase in 8 months. The index's 6-month smoothed growth rate rose to -6.5% from a revised -7.7% in September. Five of the index's seven components increased in September, however a large drop in the S&P stock price index for aluminum companies slowed the leading index increase. The index measuring the trade-weighted average exchange value of other major currencies against the U.S. dollar also moved lower, while a 1-hour increase in the length of the average workweek in primary aluminum establishments made the largest positive contribution. The growth rate of the primary aluminum leading index still points to declining growth in U.S. primary aluminum activity. (Tables and charts for the primary aluminum indexes are in a separate file.)

The **copper leading index** also increased in September, up 0.2% to 127.3 from a revised 127.0 in August, and its 6-month smoothed growth rate rose to -2.9% from a revised -4.0% in August. The largest positive contributors were the ratio of shipments to inventories for electronic and electrical equipment,

inflation-adjusted new orders for nonferrous and other primary metals, and the LME spot price for primary copper, while the largest negative contributor was the S&P stock price index for building materials companies. Despite the September increase, the growth rate of the copper leading index indicates that there will be no near-term growth in domestic copper activity.

Leading Index Still Signaling Weak Growth for Metal Prices

The **metals price leading index** was unchanged in September holding at August's revised level of 105.9. However, the index's 6-month smoothed growth rate rose a bit to -2.8% from a revised -3.1% in August. Two of the three index components that were available for September decreased, while one moved higher. The growth rate of the index measuring the trade-weighted average exchange value of other major currencies against the U.S. dollar had the largest negative impact on the leading index, and a decline in the yield spread also pushed the index lower. In contrast, the growth rate of the inflation-adjusted value of new orders for

U.S. nonferrous metals posted its second largest gain in the past year. The fourth index component, the growth rate of the Economic Cycle Research Institute's 16-Country Long Leading Index, is available only through August, when it increased to its highest rate in 9 months.

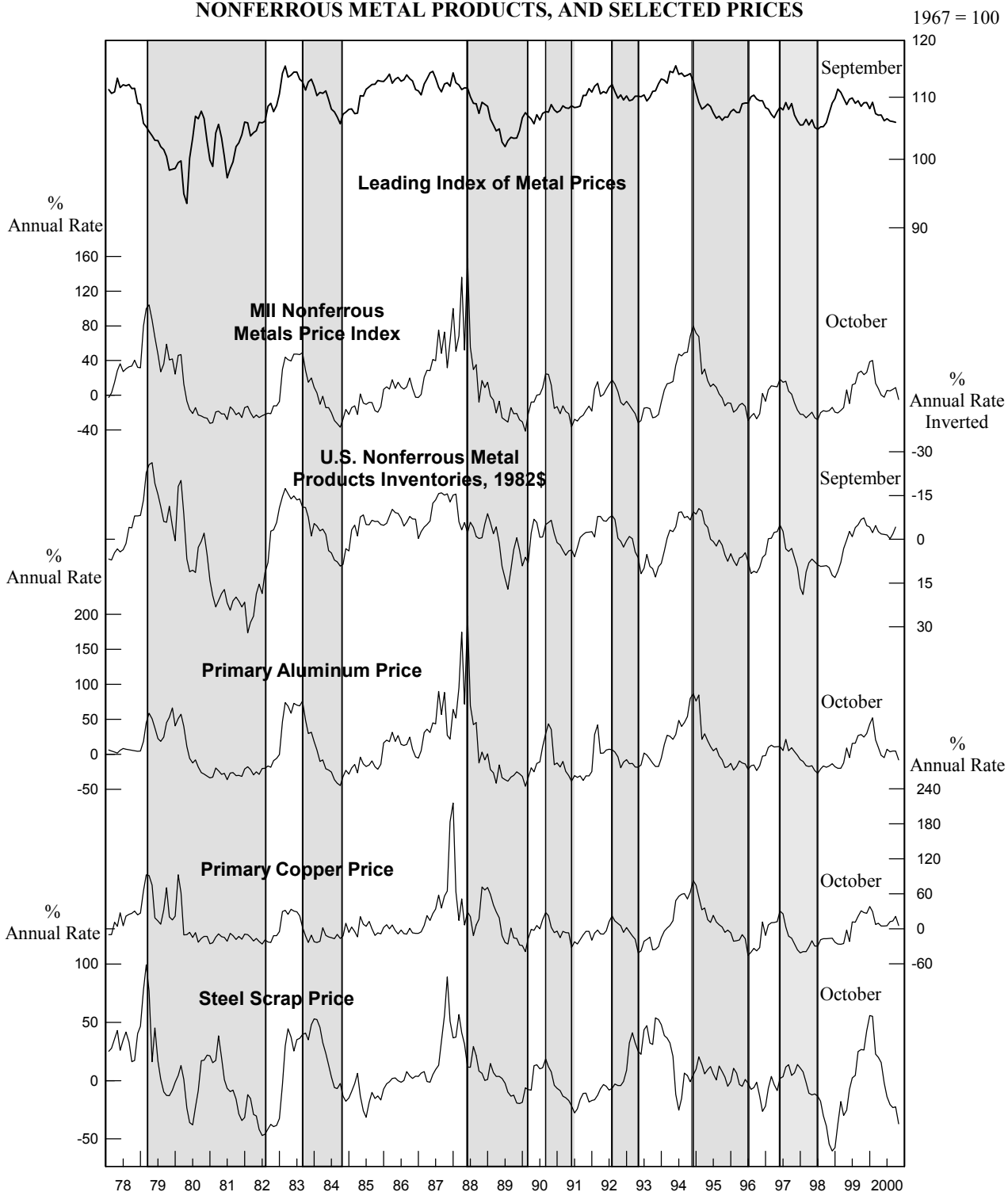
The 6-month smoothed growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories moved down in September to -4.2% from a revised -1.8% in August, with the actual value of these inventories declining to the lowest value since April 1998.

The trend of the metals price leading index continues to point to weak growth for most metal prices in the near term, even though the latest declines in U.S. nonferrous metal products inventories suggest the possibility that the recent declines in metal price growth may be easing. The business cycle and inventories are only two factors in metals price determination. Other factors that affect prices include changes in metals production, speculation, foreign exchange rates, strategic stockpiling, political instability, and production costs.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

	Leading Index of Metal Prices (1967=100)	Six-Month Smoothed Growth Rates				
		MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
1999						
September	108.5r	27.9	-6.8	28.0	31.0	26.6
October	109.1	23.8	-7.3	24.4	28.0	26.2
November	109.1	26.6	-4.7	29.4	26.5	42.7
December	108.1	38.6	-4.2	42.7	38.3	55.8
2000						
January	109.2	40.1	-2.3	52.1	29.7	55.2
February	107.2r	13.7	-4.7	20.6	7.6	22.7
March	107.0	7.8	-2.6	9.6	9.8	19.8
April	107.0r	0.4	-1.8	-1.7	4.9	15.7
May	106.1r	-2.3	-1.7r	-4.9	4.9	-1.9
June	106.4r	5.6	-1.5	6.9	5.2	-13.7
July	106.0r	5.2	-0.2	3.3	12.4	-20.5
August	105.9r	6.7	-1.8r	4.4	13.9	-23.2
September	105.9	9.0	-4.2	4.5	21.7	-22.4
October	NA	-4.8	NA	-8.4	5.7	-37.0
NA: Not available r: Revised						
Note:	The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metals, the Economic Cycle Research Institute's 16-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.					
Sources:	U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.					

**CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES
OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF
NONFERROUS METAL PRODUCTS, AND SELECTED PRICES**



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
November	129.8	3.2	114.6	3.8
December	130.0	3.0r	115.2	4.2
2000				
January	131.2r	4.0	115.5	4.1
February	127.9r	-1.5r	115.1	2.8
March	127.5r	-2.3r	115.9	3.5
April	128.7r	-0.7r	116.2	3.6
May	127.0	-3.3	115.4	1.6
June	125.7	-4.9	115.7r	1.6r
July	124.9r	-5.6r	115.6	1.0
August	124.3r	-5.9r	114.7r	-0.6r
September	125.1r	-4.2r	114.4	-1.2
October	121.1	-9.3	NA	NA

NA: Not available r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	September	October
1. Average weekly hours, primary metals (SIC 33)	0.0	-0.7
2. S&P stock price index, machinery, diversified	-0.1r	-1.2
3. Ratio of price to unit labor cost (SIC 33)	0.1	NA
4. JOC-ECRI metals price index growth rate	0.2r	-0.9
5. New orders, primary metals, (SIC 33) 1982\$	0.2	NA
6. Index of new private housing units authorized by permit	0.1	NA
7. Growth rate of U.S. M2 money supply, 1996\$	0.1	NA
8. Purchasing Managers' Index	0.1	-0.4
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.7r	-3.2
Coincident Index	August	September
1. Industrial production index, primary metals (SIC 33)	-0.1r	0.1
2. Total employee hours, primary metals (SIC 33)	-0.6r	-0.2
3. Value of shipments, primary metals, (SIC 33) 1982\$	-0.2r	-0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.8r	-0.2

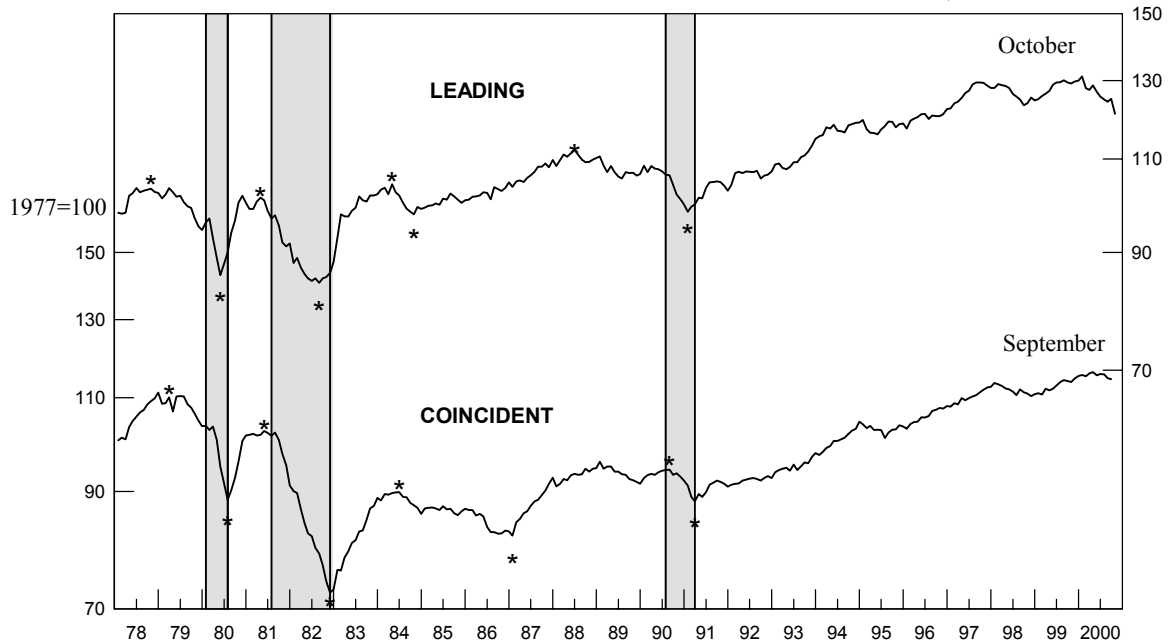
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available r: Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

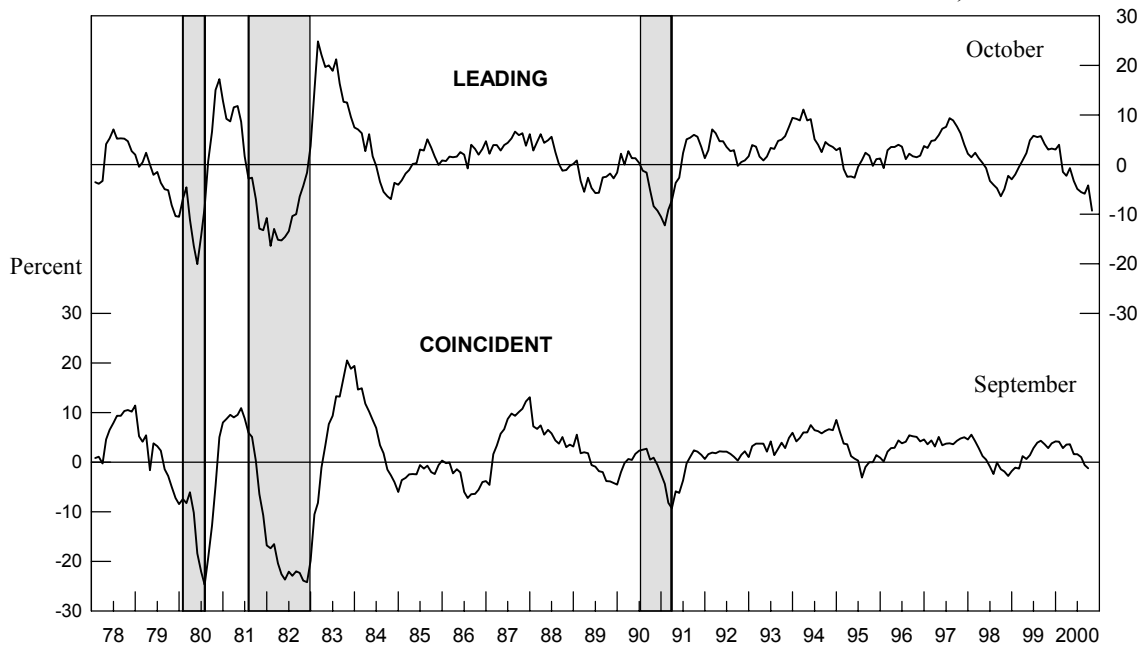
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1978-2000 1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1978-2000 Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
October	111.9	1.7	102.1	5.3
November	113.0	2.9	103.0	6.4
December	113.1r	2.4	103.1	5.6
2000				
January	114.0	3.3	103.1	4.8
February	111.6	-1.2r	103.1	3.9
March	111.1r	-2.1r	103.7	4.2
April	110.6r	-2.9r	103.0	2.3
May	109.5	-4.5	103.0	1.5r
June	108.4r	-5.9r	103.3	1.7
July	106.7r	-8.1	102.8	0.2
August	106.6r	-7.5r	102.2r	-1.0r
September	107.1	-5.9	101.8	-1.9

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

Leading Index	August	September
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	-0.6r	0.1
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982\$, (SIC 331)	0.0	0.1
3. Shipments of household appliances, 1982\$	0.3r	0.3
4. S&P stock price index, steel companies	0.1	-0.5
5. Industrial production index for automotive products	0.1r	0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.1	0.0
7. Index of new private housing units authorized by permit	-0.1	0.1
8. Growth rate of U.S. M2 money supply, 1996\$	0.3	0.1
9. Purchasing Managers' Index	-0.3	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.3r	0.4
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	0.1r	0.0
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982\$	-0.2	-0.5
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	-0.5	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	-0.4

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.
STEEL: LEADING AND COINCIDENT INDEXES, 1978-2000

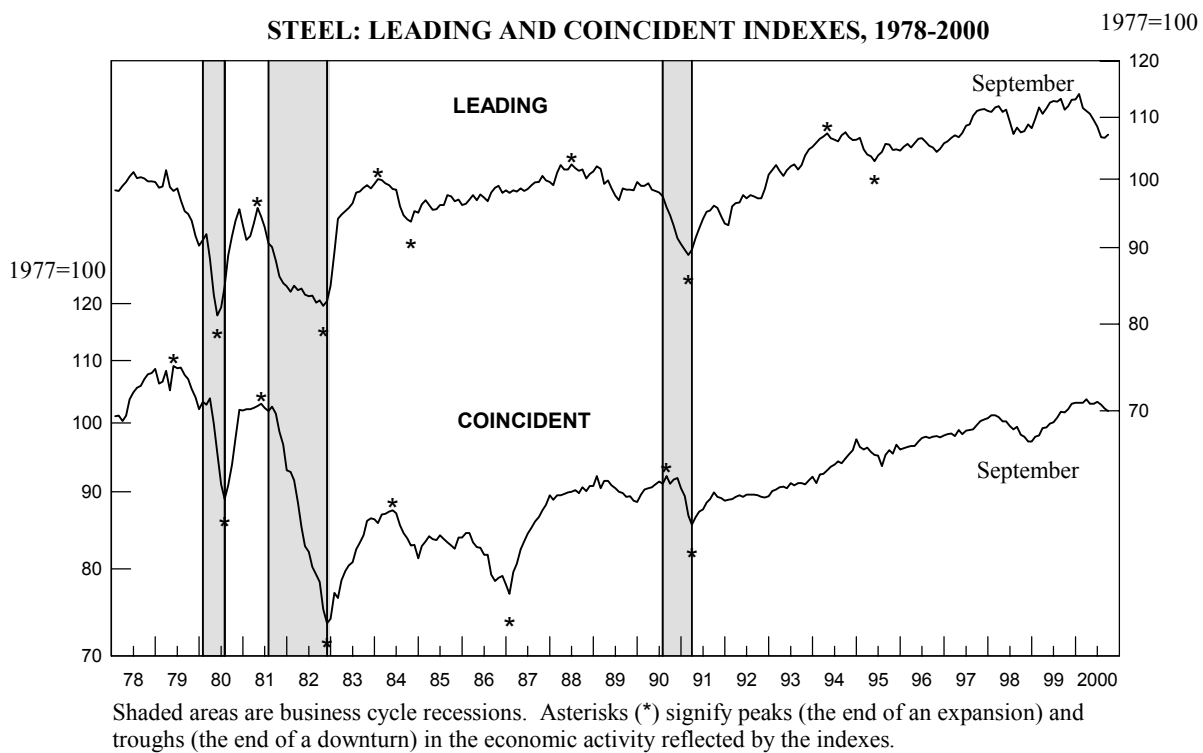


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1978-2000

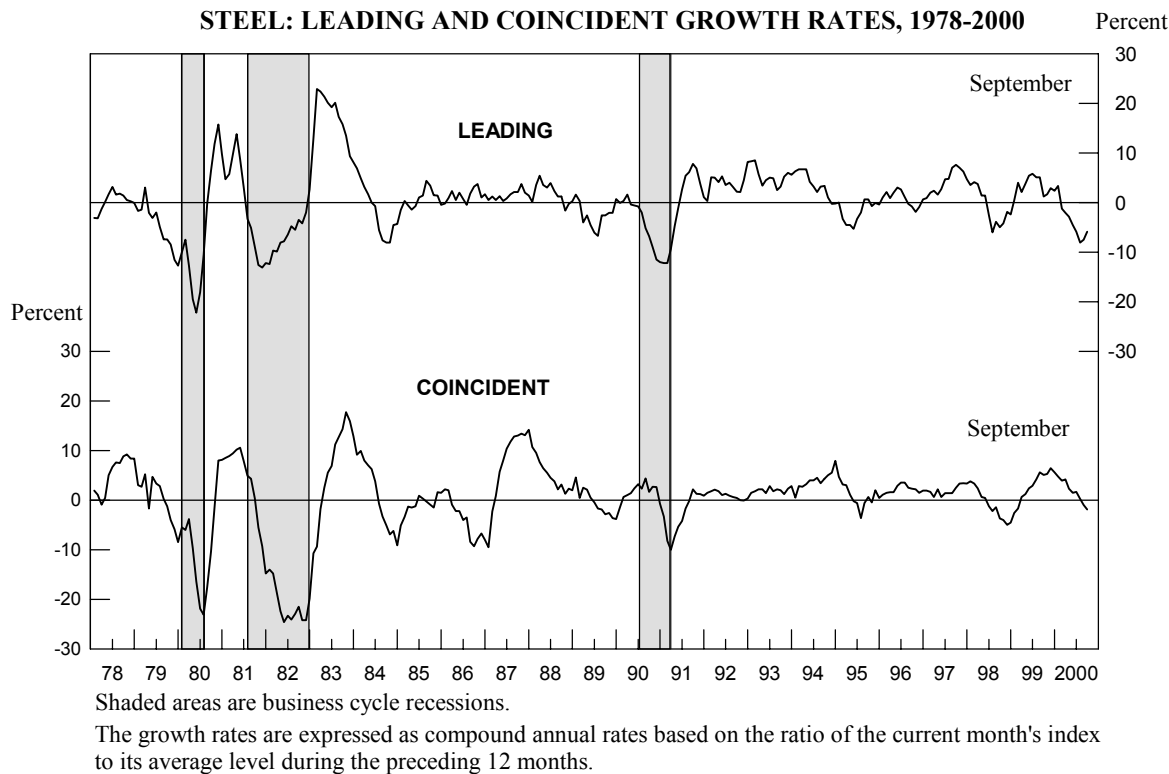


Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
October	155.4	-0.9	143.1	2.8
November	155.5	-1.0	141.6	0.5
December	157.4r	1.0r	143.8	3.0
2000				
January	159.1r	2.7	143.9	2.7
February	158.4	1.5	143.4	1.6
March	159.0r	1.8r	143.5	1.1
April	160.0r	2.7r	145.2	3.0
May	157.2r	-1.0	144.7	2.0
June	157.2r	-1.0r	142.4r	-1.3r
July	153.6	-4.9	144.4r	1.2r
August	156.9	-0.5	142.6r	-1.3r
September	159.1	2.1	142.0	-1.9

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

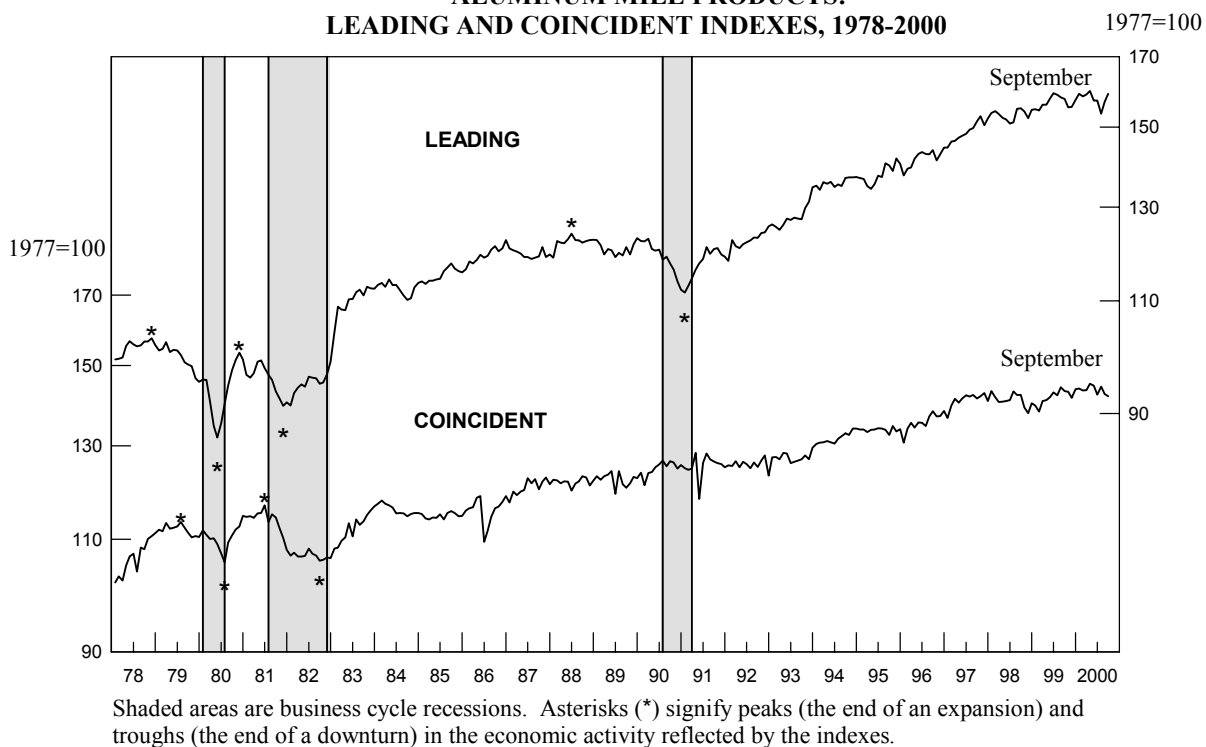
Table 7.
The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index	August	September
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	0.7	-0.3
2. Index of new private housing units authorized by permit	-0.1	0.1
3. Industrial production index for automotive products	0.2	0.2
4. Construction contracts, commercial and industrial (square feet)	1.0	0.9
5. Net new orders for aluminum mill products (pounds)	0.2r	0.2
6. Growth rate of U.S. M2 money supply, 1996\$	0.4	0.1
7. Purchasing Managers' Index	-0.4	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	2.1r	1.4
Coincident Index		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	-1.0r	0.3
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	-0.4r	-0.9
Trend adjustment	0.2	0.2
Percent change (except for rounding differences)	-1.2r	-0.4

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted.

r: Revised

**CHART 6.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1978-2000**



**CHART 7.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1978-2000**

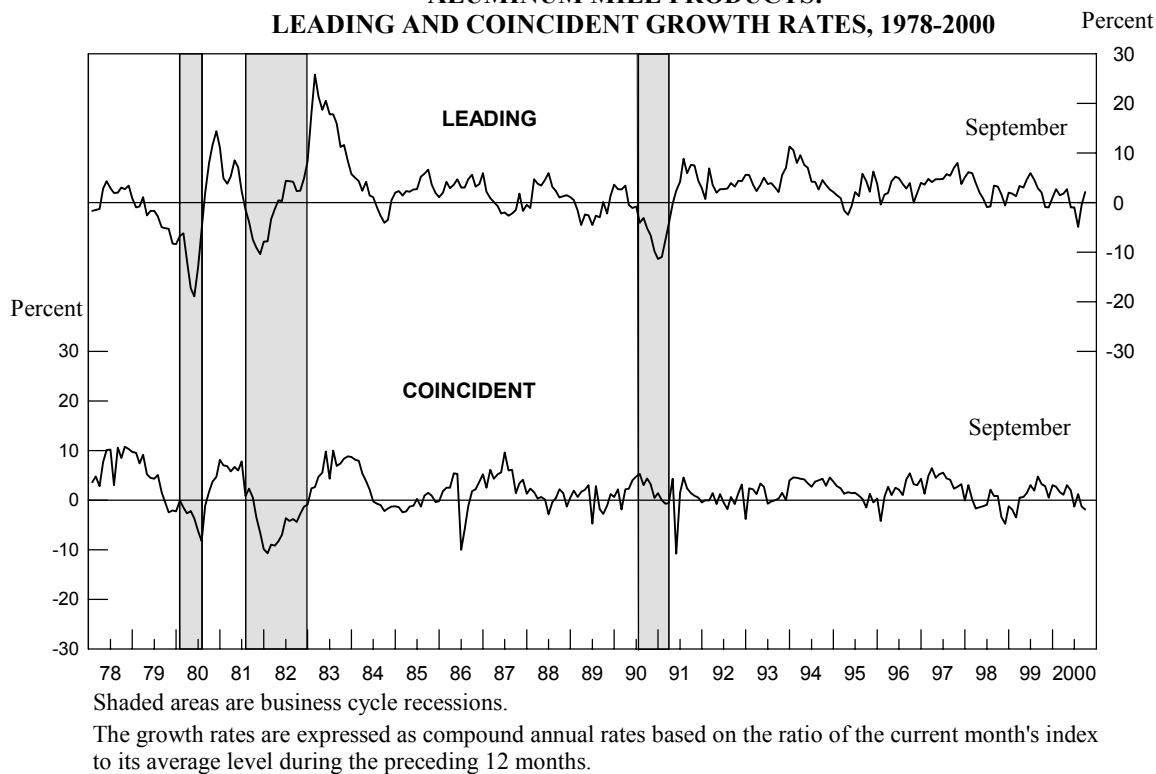


Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
October	131.4	1.0	121.6	-3.5
November	130.5	-0.7	121.2	-3.7
December	130.0	-1.5	121.5	-2.7
2000				
January	131.2	0.1	119.7	-4.8
February	128.1	-4.2	121.5	-1.7
March	128.2	-3.9	121.5	-1.3
April	129.2	-2.5	119.4	-3.9
May	129.1	-2.5	121.5	-0.1
June	128.0	-3.9	120.0r	-2.2r
July	127.2	-4.5	119.8r	-2.1r
August	127.0r	-4.0r	119.7r	-1.9r
September	127.3	-2.9	120.5	-0.4

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

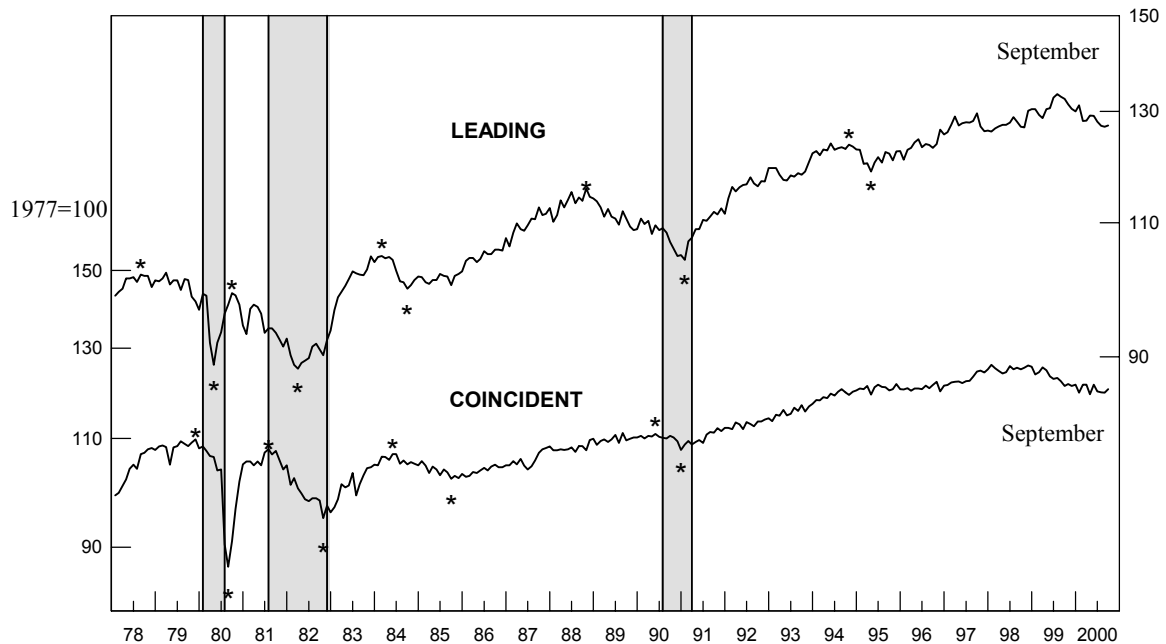
Leading Index	August	September
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.1	-0.1
2. New orders, nonferrous and other primary metals, 1982\$	0.0	0.2
3. S&P stock price index, building materials companies	0.1	-0.5
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	0.1r	0.3
5. LME spot price of primary copper	0.1	0.2
6. Index of new private housing units authorized by permit	-0.1	0.1
7. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.1	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.0r	0.2
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	0.1r	0.2
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.7r	0.3
3. Copper refiners' shipments (short tons)	0.3	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.2r	0.6

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, Census Bureau and U.S. Geological Survey; 5, London Metal Exchange; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 5, and 7 of the leading index.

r: Revised NA: Not available

CHART 8.
COPPER: LEADING AND COINCIDENT INDEXES, 1978-2000

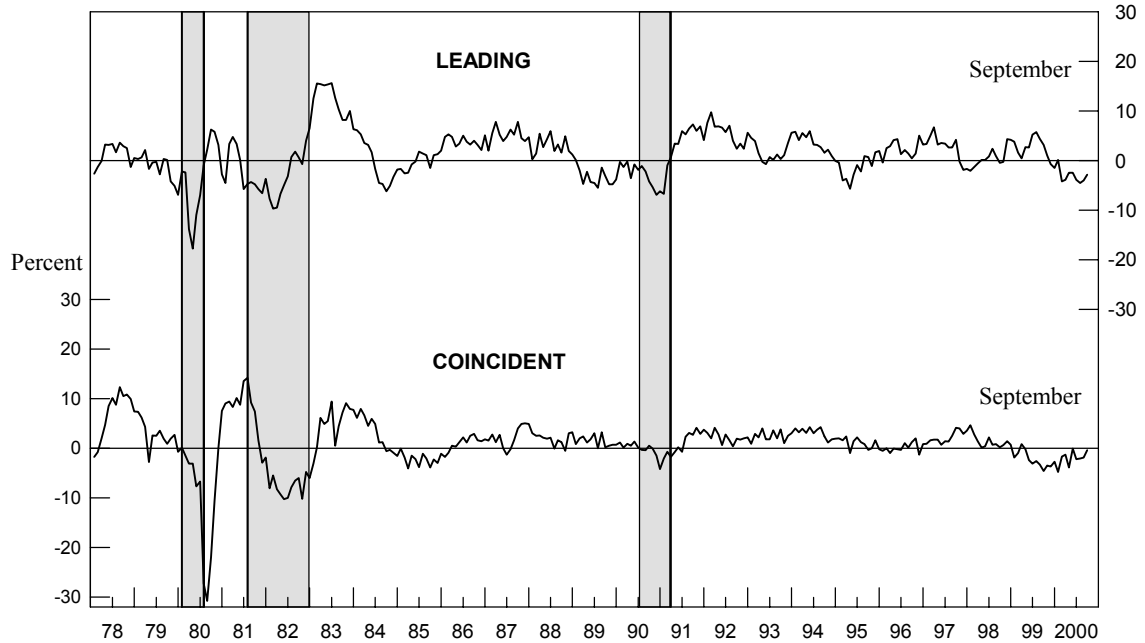
1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 9.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1978-2000

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.¹

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Four of the metal industry coincident indexes, those for primary metals, steel, primary aluminum, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. The coincident index for copper is a blend of two different copper industries, primary smelting and refining of copper and rolling, drawing, and extruding of copper.

Of the five metal industries, primary metals is the broadest, consisting of twenty-six different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals and 8 months for steel and copper. The average lead time for the primary aluminum leading index is 6 to 8 months, and the average lead time for the aluminum mill products leading index is 6 months.

¹Business Cycle Indicators, A monthly report from The Conference Board (March 1996).

The leading index of metal prices, also published in the *Metal Industry Indicators*, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 8 months in advance.

The growth rate used in the *Metal Industry Indicators* is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[\left(\frac{\text{current value}}{\text{preceding 12-month moving average}} \right)^{\frac{12}{6.5}} - 1.0 \right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EST, Tuesday, December 19. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for *Metal Industry Indicators* on the World Wide Web is: <http://minerals.usgs.gov/minerals/pubs/mii/>

The *Metal Industry Indicators* is produced at the U.S. Geological Survey by the Minerals Information Team. The report is prepared by Kenneth Beckman (703-648-4916), e-mail (kbeckman@usgs.gov), and Gail James (703-648-4915), e-mail (gjames@usgs.gov). The former Center for International Business Cycle Research, under the direction of Dr. Geoffrey H. Moore, and the former U.S. Bureau of Mines developed the metal industry leading and coincident indexes in the early 1990's. Customers can send mail concerning the *Metal Industry Indicators* to the following address:

U.S. Geological Survey
Minerals Information Team
988 National Center
Reston, Virginia 20192